

## CLAIMS

What is claimed is:

- 1 1. A method comprising the steps of:
  - 2 a) serially providing a command sequence containing a first
  - 3 channel identifier to a first device of a plurality of daisy chained devices; and
  - 4 b) modifying the first channel identifier to generate a second
  - 5 channel identifier for transmission to the next device in the daisy chain.
- 1 2. The method of claim 1 wherein the command sequence includes a
- 2 command word, an address word, and at least one data word.
- 1 3. The method of claim 1 further comprising the step of:
  - 2 c) executing a command of the command sequence on any device
  - 3 receiving the command, if that device has a received channel identifier
  - 4 matching a pre-determined value, wherein each of the plurality of devices
  - 5 uses the same pre-determined value for comparison.
- 1 4. The method of claim 3 wherein the pre-determined value is a selected
- 2 member of the set {x0h, xFh}.
- 1 5. The method of claim 1 wherein step b) further comprises the step of
- 2 incrementing the first channel identifier to form the second channel
- 3 identifier.

1 6. The method of claim 1 wherein step b) further comprises the step of  
2 decrementing the first channel identifier to form the second channel  
3 identifier.

1 7. The method of claim 1 wherein the first channel identifier is provided  
2 in least significant bit order within the command sequence.

1 8. The method of claim 1 further comprising the step of:  
2 c) executing a command of the command sequence received by  
3 each device on that device independently of its associated received channel  
4 identifier, if a broadcast option is selected.

1 9. A serial device apparatus comprising:  
2 a serial input port for receiving a first command sequence having a  
3 first channel identifier and a remaining command sequence;  
4 a daisy chain output port; and  
5 command sequence processing logic for modifying the first channel  
6 identifier to form a second channel identifier, wherein the command  
7 processing logic provides the second channel identifier and the remaining  
8 command sequence to the daisy chain output port.

1 10. The apparatus of claim 9 wherein the first channel identifier is  
2 incremented to form the second channel identifier.

1 11. The apparatus of claim 9 wherein the first channel identifier is  
2 decremented to form the second channel identifier.

1 12. The apparatus of claim 9 wherein the first channel identifier is stored  
2 in least significant bit order within the command sequence.

1 13. The apparatus of claim 9 further comprising:  
2 command execution logic for executing the command if the first  
3 channel identifier matches a pre-determined value.

1 14. The apparatus of claim 13 wherein the pre-determined value is a  
2 selected member of the set {x0h, xFh}.

1 15. An apparatus comprising:  
2 a bus master providing an initial command sequence having an initial  
3 channel identifier;

4 a plurality of serial devices, each device comprising:  
5 a serial input port for receiving a first command sequence  
6 having a first channel identifier and a remaining command sequence;  
7 a daisy chain output port; and  
8 command sequence processing logic for modifying the first  
9 channel identifier to form a second channel identifier, wherein the command  
10 processing logic provides the second channel identifier and the remaining  
11 command sequence to the daisy chain output port;

12 a bus coupling the serial devices in one of a normal configuration and  
13 a daisy chain configuration.

1 16. The apparatus of claim 15 wherein the bus master provides the initial  
2 command sequence with the channel identifier selected from the set of {x0h,  
3 xFh} when the devices are coupled in the normal configuration, wherein  
4 each of the plurality of devices receives the initial command sequence  
5 substantially simultaneously.

1 17. The apparatus of claim 15 wherein when coupled in daisy chain  
2 configuration, the bus master provides the initial command sequence to a  
3 first serial device of the plurality of devices, wherein each subsequent device  
4 receives a modified command sequence including the second channel  
5 identifier and the remaining command sequence provided by a preceding  
6 serial device, wherein the plurality of second channel identifiers is distinct.

1 18. The apparatus of claim 15 wherein each serial device further comprises  
2 command execution logic, wherein the command execution logic executes  
3 the command sequence received by that device if the associated channel  
4 identifier matches a pre-determined value shared by the plurality of serial  
5 devices.

1 19. The apparatus of claim 18 wherein the pre-determined value is a  
2 selected member of the set {x0h, xFh}.

1 20. The apparatus of claim 15 wherein the bus master provides the initial  
2 channel identifier in least significant bit order within the initial command  
3 sequence, wherein the initial command sequence is provided in most  
4 significant bit order.